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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/099,710	03/14/2002	Shu Lin	PU020052	2027

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EXAMINER

FLETCHER, JAMES A

ART UNIT	PAPER NUMBER
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2621

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/15/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/099,710

Applicant(s)

LIN ET AL.

Examiner

James A. Fletcher

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 3 January 2007 have been fully considered but they are not persuasive.

In re page 3, Applicant's Representative states: "there is absolutely no teaching, suggestion or disclosure in McLaren for a method, and systems for performing a trick mode on a video signal including at least 'repeating a picture in the video signal to form a trick mode video signal' as taught in the Applicant's Specification and claimed by at least the Applicant's claim 1."

The Examiner respectfully disagrees. McLaren explicitly discloses repeating of pictures during trick play modes, on page 8, lines 15-30, as well as in the paragraph from page 8, line 35 to page 9, line 9; page 9 line 29 to line 37, and in the chart on page 22.

McLaren further implicitly discloses a repetition of image signals by discussing a reduction in temporal resolution on page 4, line 37 – page 5, line 4, and in particular line 27 "3 frame repeats."

As is understood by those of skill in the art, a reduction in temporal resolution of a signal provided to a display with a constant refresh rate (and there is no suggestion of a display with a variable refresh rate) requires a repeating of the image signal provided to the display.

In re page 4, Applicant's Representative states: "McLaren teaches that empty-P frames between I frames are repeated in the video stream to minimize a TP rate and not to form a trick mode signal as taught and claimed by the Applicant's invention."

The Examiner respectfully disagrees. The insertion of empty P frames, as is understood by those of skill in the art, is a technique that causes the decoder to send the I frame without predictive modification after the display time for the I frame, essentially causing a repetition of the image of the I frame, which reads on the Applicant's claims. Also, the fact that the empty P frame forms a repetitive display of a single image in a trick play mode is an inherent element of the formation of the trick mode signal, again reading on the Applicant's claims.

In re page 5, Applicant's Representative states: "The Applicant's claims 1, 9, 11, and 19 recite and claim 'setting the display indicator of the picture being repeated to a predetermined value'. McLaren does not disclose, suggest or anticipate this technical feature of the Applicant's independent claims."

The Examiner again respectfully disagrees. McLaren explicitly discloses the display indicator of the picture being repeated ("PTS/DTS values") being set to a predetermined value ("each TP I frame is presented the necessary number of frame times") as an integral element of the trick play stream generation.

Further in re page 5, Applicant's Representative states: "The repeated pictures as disclosed by McLaren are generated well in advance of the receipt of a trick mode command and before the video signals are recorded to a storage medium."

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The Examiner again respectfully disagrees. While McLaren does provide trick play frames during recording of the signal on the storage medium, those pictures are derived from the video signal, and the repetition of those frames is performed by the replay apparatus during trick play modes, again reading on the Applicant's recited claim language.

In re page 6, Applicant's Representative states: "in McLaren the DSM_trick_mode_flag is only used for implementing frame repeats and can not indicate the display order as is taught and claimed by the Applicant's independent claims."

The Examiner respectfully disagrees. The broadly claimed term "indicator" applies to McLaren's DSM_trick_mode_flag, as it clearly indicates to the player that it is in trick mode.

Further in re page 6, Applicant's Representative states: "Since the present invention does not require pre-recorded trick play video signals, there is no such tradeoff between temporal resolution and spatial resolution quality."

While the Examiner notes that such is not claimed in the present application, clearly, any instance where a frame is repeated would result in a decrease in temporal resolution, including in trick play modes.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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3. Claims 1-2, 5, 8-12, 15, and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by McLaren (WO96/13121).

Regarding claims 1-2, 9, 11-12, and 19, McLaren discloses a method and system for performing a trick mode on a video signal comprising:

- receiving a trick mode command (Page 18, lines 1-2 "A user...may chose to advance the material being viewed and initiates a remote control command."
- in response to the trick mode command, repeating a picture in the video signal to form a trick mode video signal (Page 9, lines 29-31 "in place of repeated PT I frames, frame repeats...may be implemented by writing empty P-frames between I frames in the video stream"), wherein the picture contains a display indicator (Page 9, lines 33-34 "frame repeats may be implemented by setting the DSM_trick_mode_flag");
- setting the display indicator of the picture being repeated to a predetermined value (Page 9, lines 33-37 "frame repeats may be implemented by...calculating the...PTS/DTS values such that each TP I frame is presented the necessary number of frame times apart"); and
- setting the display indicators of subsequent repeated pictures of the picture being repeated to the predetermined value (Page 9, lines 29-31 "in place of repeated PT I frames, frame repeats...may be implemented by writing empty P-frames between I frames in the video stream").
- wherein the trick mode is a freeze mode (Page 9, lines 29-31 "in place of repeated PT I frames, frame repeats...may be implemented by writing empty P-frames

between I frames in the video stream")

Regarding claims 5 and 15, McLaren discloses a method and system wherein the transmission comprises at least a first reference picture and a second reference picture to predict the picture to be repeated (Page 9, lines 29-31 "in place of repeated TP I frames, frame repeats or holding times, may be implemented by writing empty P-frames between I frames in the video stream"), wherein each reference picture contains a display indicator (Each I frame inherently indicates that the full picture is to be displayed, and each empty P-frame inherently indicates that the previous I frame is to be displayed with no modification).

Regarding claims 8, 10, 18, and 20, McLaren discloses a method and system comprising implementing the receiving, repeating and both setting steps at a first location and decoding at least a portion of the trick mode video signal at a second location (Fig 7 shows the decoder 07 at a remote location from the encoders 100, with transmitter 400 between them).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over McLaren as applied to claims above, and further in view of Metz et al (5,978,855).

Regarding claims 3 and 13, McLaren suggests a method and system wherein a

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bi-directional predictive picture is repeated (Page 1, lines 28-30 "Each GOP contains one I frame, which may be abutted by two B frames, which are followed by a P frame") but does not specifically disclose doing so.

Metz teaches the use of all frames as being available as still pictures (Col 45, lines 40-41 "all of the frames relate to a single freeze-frame image").

As suggested by McLaren and taught by Metz, once a frame has been decoded, it is available for repetition in a slow trick play mode, removing the need to decode another frame when it is unnecessary..

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a bi-directional predictive picture for repetition in a freeze-frame trick-play mode.

6. Claims 4, 6-7, 14, and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over McLaren as applied to claims above, and further in view of Takahashi et al (5,841,939).

Regarding claims 4 and 14, McLaren suggests a method and system wherein the display indicator is set as a temporal reference field having an integer value (Page 9, lines 34-37 "calculating the Presentation Time Stamp and Decode Time Stamp PTS/DTS values such that each TP I frame is presented the necessary number of frame times apart").

Takahashi et al teach the use of integer values for the number of times an image is reproduced in slow trick play modes (Col 3, lines 51-52 "the slow playback ode at a 1/N speed [N is a natural number]").

As suggested by McLaren and taught by Takahashi, presenting an integer based number of frames in a slow trick play allows for complete pictures to be shown, which provides for higher picture quality than would be available if partial images were shown.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to display an integer based number of complete pictures in slow trick play mode.

Regarding claims 6, 7, 16, and 17, McLaren suggests a method and system setting each of the display indicators as temporal reference fields having integer values (Page 9, lines 33-34 “frame repeats may be implemented by setting the DSM_trick_mode_flag” and); and, wherein the setting of the display indicator of the second reference picture further comprises setting the integer value of the temporal reference field of the second reference picture an integer value higher than the integer value of the temporal reference field of the picture being repeatedly displayed during the trick mode to maintain a proper display order (Page 9, lines 34-37 “calculating the Presentation Time Stamp and Decode Time Stamp PTS/DTS values such that each TP I frame is presented the necessary number of frame times apart”), but does not specifically disclose doing so.

Takahashi teaches a method and system of setting the display indicators of the first and second reference pictures to values such that the first reference picture is greater than that of the second reference picture (Col 3, lines 50-54 “in the slow playback mode at a $1/N$ speed [N is a natural number] outputting one frame of the valid

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image data and [N-1] frames of the invalid data in a period equivalent to N frames in the normal playback”).

As suggested by McLaren and taught by Takahashi, a presentation of a given number of identical frames (still picture or slow playback) is easily accomplished by first presenting the original picture, followed by a number of identical copies of that picture. The number of copies must be less than the total number of pictures, as there is at least one original picture displayed.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to present a smaller number of copies of the picture than the total number of pictures.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Fletcher whose telephone number is (571) 272-7377. The examiner can normally be reached on 7:45-5:45 M-Th, first Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Groody can be reached on (571) 272-7950. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JAF
5 February 2007


James J. Groody
Supervisory Patent Examiner
Art Unit 2621